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NASA-01411 (March 2003)  
NATIONAL AERONAUTICS NASA  
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(September 2002)  
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SECTION 01411

GENERAL SAFETY REQUIREMENTS  
03/03

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NOTE: Delete, revise, or add to the text in this section to cover project requirements. Notes are for designer information and will not appear in the final project specification.  
  
This narrowscope section covers mandatory safety requirements.  
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PART 1 GENERAL

1.1 SUMMARY

The requirements of this Section apply to, and are a component part of, each section of the specifications.

1.2 REFERENCES

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NOTE: The following references should not be manually edited except to add new references. References not used in the text will automatically be deleted from this section of the project specification.  
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The publications listed below form a part of this section to the extent referenced:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

NASA NPG 8621.1	(2000) NASA Mishap Reporting, Investigating and Record Keeping Policy
NASA NPG 8715.3	(2000) NASA Safety Manual
NASA NSS 1740.12	(1993) NASA Safety Standard For Explosives, Propellants and Pyrotechnics

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE EM-385-1-1

(1996) U.S. Army Corps of Engineers Safety  
and Health Requirements Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

10 CFR 20

(2002) Standards for Protection Against  
Radiation

29 CFR 1910

(2001) Occupational Safety and Health  
Standards

29 CFR 1926

(2001) Safety and Health Regulations for  
Construction

### 1.3 SUBMITTALS

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**NOTE: Review submittal description (SD) definitions  
in Section 01330 SUBMITTAL PROCEDURES and edit the  
following list to reflect only the submittals  
required for the project. Submittals should be kept  
to the minimum required for adequate quality  
control. Include a columnar list of appropriate  
products and tests beneath each submittal  
description.**

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The following shall be submitted in accordance with Section 01330 SUBMITTAL  
PROCEDURES in sufficient detail to show full compliance with the  
specification:

#### SD-01 Preconstruction Submittals

Contractor's Safety Plan

#### SD-06 Test Reports

Records shall be submitted in accordance with paragraph entitled, "  
Gas Protection," of this section.

#### SD-07 Certificates

Statements shall be submitted for the following items in  
accordance with paragraphs entitled, "Contractor's Safety Plan"  
and "Protection Plan," of this section.

Contractor's Safety Plan

Protection Plan

License Certificates for radiation materials and equipment shall  
be submitted to the Contracting Officer prior to the start of work.

#### 1.3.1 Contractor's Safety Plan

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**NOTE: List the specific Tech Doc in brackets for  
the document that describes the Safety Plan for the  
site where the project is located.**

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Contractor shall submit a safety plan to the Contracting Officer for approval within 15 calendar days after notice to proceed and prior to start of construction at project site.

Comply with the requirements in 29 CFR 1926 and [\_\_\_\_]. [\_\_\_\_] will be made available upon request.

Safety plan shall include, as a minimum, the following:

- a. Safety program objectives.
- b. Methods to attain safety objectives.
- c. Responsibility of key personnel for the Contractor.
- d. Safety meetings, surveys, inspections, and reports.
- e. Disaster and emergency programs.
- f. Lists of key personnel to be contacted in times of emergency.
- g. Program to show compliance with Federal OSHA Safety and Health Standards 29 CFR 1910 and 29 CFR 1926 and various safety requirements of [\_\_\_\_] [NASA NPG 8715.3] [COE EM-385-1-1].
- h. Methods to comply with the requirement for immediate reporting of mishaps to the Contracting Officer in accordance with NASA NPG 8621.1.
- i. Statement that the Contractor will not invalidate the integrity of safety systems without proper authorization.
- j. Procedures for emergency actions to be taken to secure dangerous conditions, to protect personnel, and secure work areas in the event of accident or an act of nature.
- l. Procedures for securing the mishap site so that the area remains secure until arrival of a safety investigator. Mishap site will remain secured until released by the Contracting Officer.

#### 1.3.2 Protection Plan

Structures, utilities, sidewalks, pavements, and other facilities immediately adjacent to excavations shall be protected against damage.

#### 1.4 GENERAL SAFETY PROVISIONS

Contractor shall take safety and health measures in performing work under this Contract. Contractor shall meet with the Contracting Officer to develop a mutual understanding relative to administration of the safety plan. Contractor is subject to applicable federal, state, and local laws, regulations, ordinances, codes, and orders relating to safety and health in effect on the date of this Contract.

During the performance of work under this Contract, the Contractor shall comply with procedures prescribed for control and safety of persons visiting the project site. Contractor is responsible for his personnel and for familiarizing each of his subcontractors with safety requirements. Contractor shall advise the Contracting Officer of any special safety restriction he has established so that Government personnel can be notified of these restrictions.

#### 1.5 SAFETY LOCKOUT/TAGOUT PROCEDURES

Contractor shall ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.147.

Contracting Officer will, at the Contractor's request, apply lockout/tagout tags and take other actions that, because of experience and knowledge, are known to be necessary to make the particular equipment safe to work on.

No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tagout tag attached to it, nor shall such tag be removed except as provided in this section.

No person shall work on any equipment that requires a lockout/tagout tag unless he, his immediate supervisor, project leader, or a subordinate has in his possession the stubs of the required lockout/tagout tags.

When work is to be performed on electrical circuits, only qualified personnel shall perform work on electrical circuits.

A supervisor who is required to enter an area protected by a lockout/tagout tag will be considered a member of the protected group provided he notifies the holder of the tag stub each time he enters and departs from the protected area.

Identification markings on building light and power distribution circuits shall not be relied on for established safe work conditions.

Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.

Pressurized or vacuum systems shall be vented to relieve differential pressure completely.

Vent valves shall be tagged open during the course of the work.

Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, system or areas shall be purged, ventilated, or otherwise made safe prior to entry.

#### 1.5.1 Tag Placement

Lockout/tagout tags shall be completed in accordance with the regulations printed on the back thereof and attached to any device which, if operated, could cause an unsafe condition to exist.

If more than one group is to work on any circuit or equipment, the employee in charge of each group shall have a separate set of lockout/tagout tags completed and properly attached.

When it is required that certain equipment be tagged, the Government will review the characteristics of the various systems involved that affect the safety of the operations and the work to be done; take the necessary actions, including voltage and pressure checks, grounding, and venting, to make the system and equipment safe to work on; and apply such lockout/tagout tags to those switches, valves, vents, or other mechanical devices needed to preserve the safety provided. This operation is referred to as "Providing Safety Clearance."

#### 1.5.2 Tag Removal

When any individual or group has completed its part of the work and is clear of the circuits or equipment, the supervisor, project leader, or individual for whom the equipment was tagged shall turn in his signed lockout/tagout tag stub to the Contracting Officer. That group's or individual's lockout/tagout tags on equipment may then be removed on authorization by the Contracting Officer.

### 1.6 ACCIDENT TREATMENT AND RECORDS

Contractor shall post emergency first aid and ambulance information at project site.

Contractor employees may utilize Government dispensary facilities located in building [\_\_\_\_\_] for injury and emergency medical treatment. Such treatment shall be recorded by the Contractor on form [\_\_\_\_], Injury Report. Contact Occupational Medicine Services. [(Telephone (\_\_\_\_) \_\_\_\_-\_\_\_\_)]

### 1.7 FIRE PREVENTION AND PROTECTION

Open-flame heating devices will not be permitted except by approval in writing from the Contracting Officer. Approval for the use of open fires and open-flame heating devices will not relieve the Contractor from the responsibility for any damage incurred because of fires.

Burning trash, brush, or wood on the project site shall [not] be permitted.

### 1.8 USE OF EXPLOSIVES

Explosives shall not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval shall not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, shall be only where directed and in approved storage facilities. These facilities shall be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

Explosive work shall be performed in accordance with NASA NSS 1740.12. This document is available at:

<http://www.hq.nasa.gov/office/codeq/doctree/871912.htm>

#### 1.9 ELECTRICAL

Contractor shall appoint an individual responsible for the electrical safety of each work team to restrict entry to dangerous locations to those authorized by him jointly with the Government.

#### 1.10 UNDERGROUND UTILITIES

Safety clearance from the Contracting Officer is required before any Contractor personnel enters a manhole. Contractor shall contact the Contracting Officer for support services by calling [(\_\_\_\_) \_\_\_\_-\_\_\_\_] at least 24 hours in advance.

Contractor shall be responsible for removing water and debris before commencement and during execution of work in manholes.

#### 1.11 RADIATION SAFETY REQUIREMENTS

License Certificates for radiation materials and equipment shall be submitted to the Contracting Officer for all specialized material and equipment that could cause fatal harm to construction personnel or to the construction project.

Workers shall be protected from radiation exposure in accordance with 10 CFR 20. Standards for Protection Against Radiation

Loss of radioactive material shall be reported immediately to the Contracting Officer.

Actual exposure of the radiographic film or unshielding the source shall not be initiated until after 5 p.m. on weekdays.

In instances where radiography is scheduled near or adjacent to buildings or areas having limited access or one-way doors, no assumptions shall be made as to building occupancy. Where necessary, the Contracting Officer will direct the Contractor to conduct an actual building entry, search, and alert. Where removal of personnel from such a building cannot be accomplished and it is otherwise safe to proceed with the radiography, a

fully instructed employee shall be positioned inside such building or area to prevent exiting while external radiographic operations are in process.

#### 1.12 FACILITY OCCUPANCY CLOSURE

Streets, walks, and other facilities occupied and used by the Government shall not be closed or obstructed without written permission from the Contracting Officer.

#### 1.13 PROTECTION OF WORK

Prior to performing any excavation work or any surface penetrations 6 inches 150 millimeter or deeper (such as driving stakes more than 6 inches 150 millimeter in the ground) on any ground surface, the Contractor shall obtain from the Contracting Officer the current subsurface utility drawing of the particular area to be worked on. Contractor shall stake out subsurface utilities, communication cables and pipe lines indicated within the area of work.

Contractor shall notify the Contracting Officer, 48 hours prior to the start of excavation work or surface penetration, to enable the Contracting Officer to review measures being taken to prevent hazard to employees and possible damage to subsurface utilities. Where emergency conditions preclude the 48 hours advance notification, the Contractor shall immediately inform the Contracting Officer of his intention to initiate work prior to actual start of activity.

After obtaining clearance from the Contracting Officer, the Contractor shall proceed with excavating work, or other surface penetration work. Contractor shall temporarily halt any machine excavation work or other surface penetration when approaching 10 feet 3 meters of an existing utility line until the Contractor has exposed the utility line by hand excavation.

#### 1.14 GAS PROTECTION

Contractor shall have one or more employees properly trained in operation of gas testing equipment and formally qualified as gas inspectors who shall be on duty during times workmen are in confined spaces. Their primary functions shall be to test for gas and operate testing equipment. Unless equipment of constant supervisory type with automatic alarm is employed, gas tests shall be made at least every 2 hours or more often when character of ground or experience indicates gas may be encountered. A gas test shall be made before workmen are permitted to enter the excavation after an idle period exceeding one-half hour.

Readings shall be permanently recorded daily, indicating the concentration of gas, point of test, and time of test. Submit copies of the gas test readings to the Contracting Officer at the end of each work day.

Special requirements, coordination, and precautions will apply to areas that contain a hazardous atmosphere or, by virtue of their use or physical character, may be oxygen deficient. A check by Government is required prior to entering confined space. Surveillance and monitoring shall be



required in these types of work spaces by both Contractor and Government personnel.

#### 1.15 ROOFING AND COATING

At the beginning of each work day the Contractor shall check with the Contracting Officer before proceeding to work on the roof to ensure safe work conditions. Contractor shall comply with 29 CFR 1926.

#### 1.16 WELDING, FLAME CUTTING, AND MELTING

Contractor shall clear welding and cutting operations with the Contracting Officer before operations begin.

Contractor shall discontinue burning, welding, or cutting operations 1 hour prior to the end of the normal work day. A workman shall remain at the site for 1 hour after discontinuing these operations to make thorough inspection of the area for possible sources of latent combustion. He shall be equipped with two full 15-pound 6.8 kilogram carbon dioxide fire extinguishers. Any unsafe conditions shall be reported to the Center Fire Station. [(Telephone: (\_\_\_\_) \_\_\_\_-\_\_\_\_)]

During operations involving possible fire hazard, the Contractor shall notify the Contracting Officer and not proceed until clearance is obtained in writing. Contracting Officer may request a standby from the Fire Station. This requirement does not relieve the Contractor of his responsibility for welding and cutting safety.

#### 1.17 HIGH NOISE LEVEL PROTECTION

Operations performed by the Contractor that involve the use of equipment with output of high noise levels (jackhammers, air compressors, and explosive device activated tools) shall be scheduled for [weekends] [after duty working hours] during the hours [\_\_\_\_] at [\_\_\_\_]. Use of any such equipment shall be approved in writing by the Contracting Officer prior to commencement of work.

#### 1.18 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor shall:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

#### 1.19 HAZARDOUS WASTE

Contractor shall identify all wastes produced and dispose of them in the following approved manners:

Identify all wastes and waste producing processes including chemicals, paints, Petroleum, Oil and Lubricant (POL) products and solvents, and their containers. All unknown wastes shall be chemically identified.

Obtain a determination of whether the waste is hazardous from the Contracting Officer.

Notify the Contracting Officer prior to taking disposal action for any hazardous waste.

For disposal, provide either laboratory analysis data documenting the chemical content of the waste or certification by appropriate organization authority as to the chemical constituents of the waste. Technical assistance on disposal analysis requirements will be provided on request by contacting the Contracting Officer.

Document the waste type, quantity, location, and personnel/contractor/agency responsible so the material can be tracked from generation through ultimate disposal as required by Environmental Protection Agency under Resource Conservation and Recovery Act.

#### 1.20 CONFINED SPACE

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**NOTE: List the specific Tech Doc in the brackets  
for confined spaces for the site where the project  
is located.**

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Comply with the requirements in 29 CFR 1910.146 and [\_\_\_\_\_]. Any potential for a hazard in the confined space requires a permit system to be used. Comply with the requirements in 29 CFR 1910.146 and [\_\_\_\_\_]. NASA NPG 8715.3 is available on the internet at <http://nodis3.gsfc.nasa.gov>.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See [Local Authority] or [specify local department or agency] for entry procedures prior to entering confined space) .

All hazards pertaining to the space shall be reviewed with each employee before entry.

- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1500 mm 5 feet in depth.
- d. Sewer waste walls require continuous atmosphere monitoring with

audible alarm for toxic gas detection.

- e. Include training information for employees who will be involved as entrant attendants for the work.
- f. Entry Permit. Use [\_\_\_\_\_] or other form with the same minimum information for the Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --